



UNITED STATES PATENT AND TRADEMARK OFFICE

Edh

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/689,642 | 10/22/2003 | Masanori Minamio | 60188-686 | 4046 |

7590 06/09/2005

Jack Q. Lever, Jr.
McDERMOTT, WILL & EMERY
600 Thirteenth Street, N.W.
Washington, DC 20005-3096

EXAMINER

CLARK, JASMINE JHIHAN B

ART UNIT PAPER NUMBER

2815

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,642

Applicant(s)

MASANORI MINAMIO ET AL.

Examiner

Jasmine J. Clark

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/6/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 04/06/2005 was filed after the allowance dated on 02/28/2005. The information disclosure statement is being considered by the examiner.
2. The indication of allowability set forth in the previous action is withdrawn in view of the newly reference to Masanori et al. (JP 2002-246529), submitted by the Applicants after allowance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Masanori et al. (JP 2002-246529), Applicants' submitted prior art.

Masanori et al show in Figs. 6a and 6b, in page 17, an outer frame (areas of 32A and/or 31) with a plurality of sides surrounding a region of the leadframe on which a semiconductor chip (see chip in Fig. 6B) is to be mounted; a die pad 33 on which the semiconductor chip is to be mounted; and a plurality of leads each having land portions 34 and connections 32B, the land portions each having an upper surface serving as a bonding pad to be connected with a metal wiring and a lowermost part serving as an

Art Unit: 2815

external terminal, the connections each being devoid of its lower part so as to be thinner than the land portion and being provided between the outer frame and the land portion, between the land portion associated with each other in each lead, and between the land portions and the die (see Fig. 6B), wherein the die pad 33 and outer frame are connected to each other via the land portions and the connections.

Concerning claim 2, wherein the lowermost parts of the land portions are substantially identical in shape in plane view and are arranged in a lattice pattern, Fig. 6B shows the lowermost parts of the land portions 34 are substantially in a lattice pattern, and the lattice pattern is shown in Fig. 6A.

Concerning claim 3, wherein three or more rows of the lowermost parts of the land portions are arranged along each side of the outer frame, please see the top view of Fig. 6A.

Concerning claim 4, wherein the plurality of leads include a lead (eg, lead 32B) that is connected to one side of the outer frame and is connected to the other lead that is connected to other side of the outer frame adjacent to the one side thereof, please see Fig. 6A.

Concerning claim 5, Figs. 6A and 6B shows a leadframe 31 comprising an outer frame with a plurality of sides surrounding a region of the leadframe on which a semiconductor chip 42 is mounted; a die pad 33 having a thin portion that is provided along the peripheral section of the main body of the die pad and that is devoid of its lower part (area 33a), and a plurality of heat dissipating terminals each protruded downward from the lower surface of the thin portion (Fig. 6B shows the heat dissipating

Art Unit: 2815

terminals protruding from the die pad, since the die pad can have its heat dissipation area); and a plurality of lead each having land portions and connections, the land portions each having an upper surface serving as a bonding pad to be connected with a metal wiring and a lowermost part serving as an external terminal, the connections each being devoid of its lower part so as to be thinner than the land portion and being provided between the outer frame and the land portions, between the land portions associated with each other in each lead, and between the land portions and the heat dissipating terminals. Please see the above discussion.

Concerning claim 6, wherein the land portions and the heat dissipating terminals are substantially identical in shape in plan view and are arranged in a lattice pattern, please see the above discussion in paragraph 2.

Concerning claim 7, wherein the land portions and the heat dissipating terminals are arranged at substantially fixed pitch intervals in at least one direction, please view Fig. 6B.

Initially, and with respect to the recitation "...wherein the three or more rows of the land portions are arranged along each side of the outer frame, and wherein there exists no member that functions as a suspension lead during plastic encapsulation" in claims 8 and 9, note that a "product by process" claim is directed to the product per se, no matter how actually made. See *In re Thorpe et al.*, 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is

Art Unit: 2815

not patentable as a product, whether claimed in "product by process" claims or not.

Note that the Applicants have burden of proof in such cases as the above case law makes clear.

Note that: there is no structure claimed in these claims (claims 1-9) which could distinguish over the prior art shown in Figs. 6A and 6B.

Field of Search

4. This Application was re-searched, I class 257, subclasses 666, 670, 672, 675, E21.031, in view of the limitations of the claimed invention.

Telephone Inquiry Contacts

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J. Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2815

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jjbc/05/10/05

JASMINE CLARK
PRIMARY EXAMINER

Jasmine Clark